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Applicant,	Title of invention, Abstract — e.g. computer ser	niconductor
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	vacuum and eject and pin	AND -
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Date of pu	iblication of application — e.g.19980401 - 19980	1405
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No.	Publication No.	Title
1.	2003 - 276060	INJECTION MOLDING DIE AND PIN THEREFOR
2.	2003 - 136217	EJECTION PIN FOR VACUUM DIE CASTING
3.	2002 - 239707	DIE CASTING APPARATUS
4.	2001 - 200361	OBSERVATORY APPARATUS IN HOT VACUUM VAPOR DEPOSITION APPARATUS
5.	11 - 354616(1999)	CHIP EJECTING DEVICE
6.	11 - 026667(1999)	MANUFACTURE OF SEMICONDUCTOR DEVICE
7.	10 - 197700(1998)	ELECTRON-BEAM IRRADIATION METHOD AND OBJECT IRRADIATED WITH ELECTRON BEAM
8.	10 - 189511(1998)	WAFER CLEANING DEVICE
9.	10 - 048136(1998)	METHOD AND APPARATUS FOR ANALYZING GAS ELEMENT
10.	09 - 235676(1997)	PLASMA TREATMENT AND PLASMA TREATING DEVICE
11.	09 - 229563(1997)	CASTING MACHINE
12.	09 - 193174(1997)	APPARATUS FOR EXTRACTING ELASTIC MOLDED PRODUCT AND METHOD
13.	09 - 068808(1997)	PHOTOCOMPOSING MACHINE
14.	09 - 022665(1997)	X-RAY IMAGE PICKUP TUBE AND MANUFACTURE THEREOF
15.	07 - 316950(1995)	EJECTION DEVICE FOR FLOAT WEFT
16.	05 - 024080(1993)	INJECTION MOLDING MOLD AND INJECTION MOLDING METHOD
17.	04 - 336218(1992)	MOLD
18.	03 - 291389(1991)	PLASMA TREATING DEVICE
19.	03 - 254921(1991)	INJECTION MOLD
20.	03 - 254920(1991)	INJECTION MOLD
21.	03 - 161156(1991)	VACUUM DIE CASTING MACHINE
22.	02 - 258236(1990)	MOLDING METHOD OF SHORT-FIBER-REINFORCED RESIN
23.	01 - 320117(1989)	SYNTHETIC RESIN MOLDING EQUIPMENT
24.	01 - 109737(1989)	CHUCKING DEVICE AND METHOD FOR REMOVING WAFER TO BE CUT OFF FROM LARGE DIE
25.	63 - 264320(1988)	METHOD AND APPARATUS FOR MOLDING DISC
26.	63 - 210932(1988)	COMPOSER
27.	60 - 116421(1985)	EXTRACTING DEVICE FOR MOLDED PART
28.	58 - 197734(1983)	MOLD PRODUCT LOADING/UNLOADING APPARATUS
29.	58 - 059826(1983)	RESIN CASING FOR VACUUM CLEANER OR THE LIKE

- 30. <u>57 160561(1982)</u> VACUUM DIE CASTING METHOD
- 31. <u>57 160560(1982)</u> PRESSURE CASTING DEVICE

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		ocument 6184063		Issue Date	Pages	Title Method and apparatus for	Current OR 438/113	Current XRef
1	បន	6184063	ВŢ	20010206	10	breaking and separating a	436/113	225/96;
2				19890725	9	Pre-peel die ejector apparatus	414/416.1	156/344; 156/584;
3	บร	6608370	В1	20030819	18	Semiconductor wafer having a thin die and tethers and		206/710; 206/711;
4	A1				17	Method of separating and handling a thin	29/825	29/743; 29/762
5	υs	5169196	A	19921208	9	Non-contact pick-up head	294/64.3	271/97
6	បន	4876791	A	19891031	16	Apparatus for and methods of die bonding	29/840	29/709; 29/740;
7	បន	4494902	A	19850122	11	Method of and device for feeding electric and/or	221/74	156/541; 156/584;
8	US	6190115	В1	20010220	28	Component suction method	414/752.1	29/741
9	បន	5966903	A	19991019	7	High speed flip-chip dispensing	53/397	221/74; 29/743;
10	បន	5589029	A	19961231	10	Semiconductor chip-supply method and apparatus	156/344	156/584; 294/64.1;
11	បន	4166562	A	19790904	16	Assembly system for microcomponent devices such	228/5.1	228/13; 228/15.1;
12	បន	5120391	Ā	19920609	5	Tape bonding apparatus	156/552	156/302; 228/180.22;

L	Hits	Search Text	DB	Time stamp
Number 23	23	(vacuum suct\$3) adj nozzle with	USPAT;	2004/03/11
23	23	(resilient flexible) adj material	EPO; JPO	17:19
24	469	(vacuum suct\$3) adj nozzle with	USPAT;	2004/03/11
]		(resilient flexible rubber)	EPO; JPO	17:20
26	1	(vacuum suct\$3) adj (tip nozzle) with	USPAT;	2004/03/11
		(resilient flexible rubber) and eject\$3	EPO; JPO	17:21
:	_	adj pin		
27	1	(vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
1		(resilient flexible rubber) and eject\$3	EPO; JPO	17:21
28	12	adj pin (vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
20	12	(resilient flexible rubber) and wafer	EPO; JPO	17:35
31	13	(vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
		(resilient flexible rubber) and die	EPO; JPO	17:36
32	603	(vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
		(resilient flexible rubber)	EPO; JPO	17:37
33	10	264/\$.ccls. and (vacuum suct\$3) near (tip	USPAT;	2004/03/11 17:37
34	21	nozzle) with (resilient flexible rubber) 29/\$.ccls. and (vacuum suct\$3) near (tip	EPO; JPO USPAT;	2004/03/11
"	" "	nozzle) with (resilient flexible rubber)	EPO; JPO	17:38
35	124	(vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
		rubber	EPO; JPO	17:44
36	76	(vacuum suct\$3) near (tip nozzle) with	USPAT;	2004/03/11
37		resilient	EPO; JPO	17:44
37	33	(vacuum suct\$3) near (tip nozzle) same resilient adj material	USPAT; EPO; JPO	2004/03/11 17:45
38	45	(vacuum suct\$3) near (tip nozzle) same	USPAT;	2004/03/11
	'3	flexible adj material	EPO; JPO	17:50
39	58	(vacuum suct\$3) near (tip nozzle) same	USPAT;	2004/03/11
		(soft resilieant flexible) adj material	EPO; JPO	17:51
-	277	chen.in. and wafer.ti.	USPAT;	2004/01/09
			US-PGPUB; EPO; JPO	10:50
_	104	(chen.in. and wafer.ti.) and separat\$3	USPAT;	2004/01/09
	101	and semiconductor	US-PGPUB;	10:51
			EPO; JPO	
-	4	((chen.in. and wafer.ti.) and separat\$3	USPAT;	2004/01/09
		and semiconductor) and tether	US-PGPUB;	10:51
l_	9	thin adj die same separat\$3 and vacuum	EPO; JPO USPAT;	2004/03/06
_	,	tilli adj die same separacys and vacuum	EPO; JPO	13:02
-	495	die same separat\$3 and vacuum same wafer	USPAT;	2004/03/06
			EPO; JPO	13:28
-	2	(die same separat\$3 and vacuum same	USPAT;	2004/03/06
		wafer) and tether	EPO; JPO	13:04
-	62	(die same separat\$3 and vacuum same wafer) and clamp\$3 and moving	USPAT; EPO; JPO	2004/03/06 13:04
_	172	die same separat\$3 and vacuum and support	USPAT;	2004/03/06
	1	same wafer and (clamp\$3 hold\$3) and	EPO; JPO	13:29
		(moving transfer\$3)		
-	12	(die same separat\$3 and vacuum and	USPAT;	2004/03/06
		support same wafer and (clamp\$3 hold\$3)	EPO; JPO	13:30
		and (moving transfer\$3)) and eject\$3 with pin		
_	17	pin ("1179482" "2647578" "3493155"	USPAT	2004/03/10
	'	"3507426" "3562057" "3562058"		11:26
		"3565306" "3677875" "3678550"		
	1	"3790051" "4140260" "4296542"		
		"4706370" "4775085" "5104023"	1	
		"5227001" "5710065").PN. wafer with die and vacuum and ejection	USPAT;	2004/03/10
1	4	adj pin	EPO; JPO	11:31
_	2		USPAT;	2004/03/10
		pin	EPO; JPO	11:32
-	32	position\$3 and clamp\$3 and moving and	USPAT;	2004/03/10
		vacuum and ejection adj pin	EPO; JPO	11:35
1-	0	downward with vacuum and ejection adj pin	USPAT;	2004/03/10
	L		EPO; JPO	11:35

-	0	down\$1ward with vacuum and ejection adj	USPAT;	2004/03/10 11:35
1_	1	pin breaking same vacuum and ejection adj pin	EPO; JPO USPAT;	2004/03/10
1		breaking same vacuum and ejection adj prin	EPO; JPO	11:36
-	1	tether and vacuum and ejection adj pin	USPAT;	2004/03/10
1			EPO; JPO	11:37
-	14	29/\$.ccls. and vacuum and ejection adj	USPAT;	2004/03/10
 _	11	pin 257/\$.ccls. and vacuum and ejection adj	EPO; JPO USPAT;	11:38
] -	11	pin	EPO; JPO	11:39
_	5	438/\$.ccls. and vacuum and ejection adj	USPAT;	2004/03/10
		pin	EPO; JPO	11:40
-	12	l ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	USPAT;	2004/03/10
	50	ejection adj pin 4494902.URPN.	EPO; JPO USPAT	11:40 2004/03/10
-	30	1494902.OREN.	OSERI	11:44
-	26	5169196.URPN.	USPAT	2004/03/10
				13:31
-	9	("4667402" "4859269" "4874444"	USPAT	2004/03/10
		"4990051" "5169196" "5351872" "5447266" "5589029" "6201306").PN.		13:32
_	9	5960260.URPN.	USPAT	2004/03/10
				13:36
-	6	•	USPAT	2004/03/10
		"5237205" "5444301" "5504374").PN.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	13:41 2004/03/10
-	7	4876791.URPN.	USPAT	13:41
_	14	("3632955" "3902148" "3946931"	USPAT	2004/03/10
1		"3949925" "3958740" "4010885"		13:42
		"4135630" "4151945" "4166562"		
	·	"4270649" "4372802" "4498023"		
_	50	"4500032" "4510683").PN. 4494902.URPN.	USPAT	2004/03/10
	30	1494902.OREN.	·	13:45
-	6	("3274038" "3785507" "3793123"	USPAT	2004/03/10
		"4290732" "4375126" "4410103").PN.		13:47
_	1	6205745.URPN.	USPAT	2004/03/10
_	3	("4494902" "5203143" "5319846").PN.	USPAT	2004/03/10
			001112	13:48
-	0	6190115.URPN.	USPAT	2004/03/10
	_	/#4404000# #521020## #5240216#\ pv	IVCD D M	13:48
_	3	("4494902" "5310301" "5348316").PN.	USPAT	2004/03/10
_	1	5966903.URPN.	USPAT	2004/03/10
				13:49
	3	("4494902" "5203143" "5319846").PN.	USPAT	2004/03/10
_	35	4740136.URPN.	USPAT	13:49
	33	3/30130.0NEN.	USERI	13:50
- •	2	("3906614" "4494902").PN.	USPAT	2004/03/10
				13:52
-	4	5589029.URPN.	USPAT	2004/03/10
_	3	("4850780" "4859269" "5348316").PN.	USPAT	2004/03/10
		1000,00 1003203 0010310 1111	001711	13:53
-	3	("4850780" "4859269" "5348316").PN.	USPAT	2004/03/10
				13:53
-	21	4166562.URPN.	USPAT	2004/03/10
_	11	("3442432" "3465408" "3593404"	USPAT	2004/03/10
		"3689991" "3724068" "3859718"		13:56
		"3887783" "3911568" "3949925"		
		"4003125" "4010885").PN.	,	2004/03/10
-	18	3887783.URPN.	USPAT	2004/03/10
_	5	5120391.URPN.	USPAT	2004/03/10
	1			13:59
-	5	("3937386" "3941297" "4050618"	USPAT	2004/03/10
		"4166562" "4526646").PN.		13:59

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-	5	("4555876" "4749329" "4851902"	USPAT	2004/03/10
		"4978253" "5549716").PN.		14:00
_	3	5987722.URPN.	USPAT	2004/03/10
				14:01
_	5	5120391.URPN.	USPAT	2004/03/10
-	3	5120391.0RPN.	USFAI	1
	_			14:02
-	8	5660318.URPN.	USPAT	2004/03/10
				14:02
_	4	("4051508" "4060828" "4244002"	USPAT	2004/03/10
		"5120391").PN.		14:03
	4	("4051508" "4060828" "4244002"	USPAT	2004/03/10
ļ -	4		USPAL	
	_	"5120391").PN.		14:03
-	5	("3937386" "3941297" "4050618"	USPAT	2004/03/10
		"4166562" "4526646").PN.		14:03
-	124	separating and vacuum and eject\$3 adj pin	USPAT;	2004/03/10
			EPO; JPO	14:16
l _	18	constrating came wafer and (custion	USPAT;	2004/03/10
-	10	separating same wafer and (suction	·	14:19
		vacuum) and (push\$3 eject\$3) adj pin	EPO; JPO	
-	62	(extract extracting separating) same (die	USPAT;	2004/03/10
		chip ic) and (suction vacuum) and	EPO; JPO	14:20
		(push\$3 eject\$3) adj pin		
<u>-</u>	3	("6297075" "6337258" "6429506").PN.	USPAT	2004/03/10
		(023/0/0 000/200 0123000 / 12111		14:21
	_	/#5153707# #5516135# #5730165#	USPAT	2004/03/10
-	6		USPAI	· •
		"5932065" "5938211" "6032715").PN.		14:21
-	1	6427539.pn.	USPAT;	2004/03/10
			EPO; JPO	16:31
_	0	6427539.URPN.	USPAT	2004/03/10
	•			16:31
	12	("3761784" "4191057" "4275406"	USPAT	2004/03/10
1 -	12		USPAI	1 ' '
		"4317126" "4444054" "4683755"		16:31
		"4986861" "4996627" "5356176"		
		"5629486" "5644102" "5917264").PN.		
_	42	4317126.URPN.	USPAT	2004/03/10
				16:31
l _	7	("3801949" "3858150" "4127840"	USPAT	2004/03/10
	,		OSIAI	
		"4203327" "4317126" "4456901"		16:32
		"4510671").PN.		
-	9	4651120.URPN.	USPAT	2004/03/10
				16:32
l _	9	("3626096" "3663768" "3772133"	USPAT	2004/03/10
	_	"3991285" "4491697" "4651120"		16:33
		"4783821" "4993072" "5146435").PN.		1 20.00
	10		TICDAM	2004/03/10
-	10	5490220.URPN.	USPAT	1
				16:33
-	13	("2425481" "3588382" "4063050"	USPAT	2004/03/10
		"4234811" "4310906" "4321432"		16:34
		"4701640" "4730283" "5255246"		
		"5490220" "5548658" "6169810"		· 1
		"6178249").PN.		ļ l
	_	· ·	ttenam	2004/03/10
-	0	6532293.URPN.	USPAT	2004/03/10
				16:34
-	0	6532293.URPN.	USPAT	2004/03/10
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ļ <u> </u>	10	5490220.URPN.	USPAT	2004/03/10
1	1	3130220.0KIN.	001111	16:35
	_	4651120 HDDN	HEDATE	
-	9	4651120.URPN.	USPAT	2004/03/10
				16:35
-	7	("3801949" "3858150" "4127840"	USPAT	2004/03/10
1	1	"4203327" "4317126" "4456901"		16:36
		"4510671").PN.		
_	13	4275406.URPN.	USPAT	2004/03/10
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	_	/#PECONOR #PECONOR #PECONOR		16:36
-	6	("3758830" "3761784" "3893228"	USPAT	2004/03/10
		"4125820" "4131524" "4204185").PN.		16:36